

10/593522

## Spark catcher for a muffler

IAP9/Rec'd PCT/PTO 20 SEP 2006

5 This invention relates to a spark catcher arrangement for a muffler comprising a muffler shell and an exhaust outlet cover that is fixed to one another in such a manner that a pocket is created between the shell and the exhaust conduit, said pocket being provided with a spark catcher net.

10 It is previously known to use spark catcher arrangements to prevent sparks from entering the air outside the muffler in order to prevent for instance forest fires when using combustion engines on chain saws. Conventional mufflers usually comprise an exhaust outlet conduit that by means of spot welding or other suitable means is fixed to the shell of the muffler. The joint between the outlet conduit and the shell also comprises one or several screws by means of which a spark catching net can be clamped in a pocket between the conduit and the shell. However, this means that it becomes  
15 cumbersome and time consuming to clean or change the net since one or several of the screws of the muffler have to be taken away before the net can be removed..

It is also previously known to use spark catcher nets that are fixed directly to the muffler by screw joints but this arrangement is rather complicated since it means that several components have to be used (net, additional screw, and some kind of weld nut or  
20 press nut). These types of fastening arrangements also exist without a nut but such arrangements have the disadvantage that the net is easily damaged as well as the thread the thread is shaped directly in the shell of the muffler.

The purpose of this invention is to achieve a spark catcher arrangement that is simple to remove without the use of tools in order to clean it or to exchange it. This is  
25 achieved by means of a device having the characteristics mentioned in the claims.

An embodiment of the invention will now be described with reference to the accompanying drawing showing a perspective view of the spark catcher arrangement.

The figure shows the shell 10 of a muffler for a two-stroke combustion engine which is used on hand held tools such as chainsaws and bush trimmers. The muffler is  
30 provided with an outlet opening 11 that at least partly is covered by an exhaust outlet cover 12 generally being shaped as a flat part 13 with an U-shaped middle section 14 that is open at one end and together with the shell of the muffler constitutes a pocket in which a spark catcher plate 15 can be inserted. The flat part 13 is in a suitable way for instance by spot weldings 16 fastened to the muffler shell 10. The middle section 14 is

provided with an outwardly extending hood 17 that overlaps the outlet opening 11 of the muffler and that is provided with an opening 18 through which the exhaust gases flow out. The outer end of the middle section 14 has a collar portion 19 that is provided with an elongated opening 20.

5       The spark catcher plate 15 comprises a rectangular net 21 having a comparatively stiff structure and is secured to a handle 22 by means of spot welding or any other suitable means. The handle 22 comprises a sheet metal that is folded and in which the net is inserted. The handle 22 is provided with a resilient tongue 23 that is an integrated part of the sheet metal and has an elongated ridge 24 arranged parallel to the  
10       opening 20 of the collar portion 19. The inner edge of the ridge 24 constitutes a slanted surface 25.

      The snap fastening arrangement described above operates in the following manner. The spark catcher plate 15 is normally fully inserted in to the pocket between the muffler shell 10 and the exhaust conduit 12 such that the net 21 covers the outlet  
15       opening 11 of the muffler shell thereby preventing sparks from following the exhaust gases through the opening 18 of the hood 17. In this position the handle 22 is inserted into the collar portion 19 and the ridge 24 extends into the opening 20 which means that the spark catcher plate 15 is fixed to the shell of the muffler. Simultaneously the outer part of the resilient tongue 23 extends outside the edge of the collar 19.

20       By depressing the resilient tongue 23 the spark catcher plate can easily be drawn out from the pocket and be removed from the shell 10 of the muffler in order to be cleaned or exchanged. The spark catcher plate 15 can then again be inserted into the pocket which means that the slanted surface 25 of the ridge 24 will depress the resilient tongue  
25       23 that will return to its original position when the ridge 24 reaches the opening 18 such that the spark catcher plate is again fixed to the muffler.